DOCUMENT RESUME

ED 142 595 UD 017 025

AUTHOR Balinsky, Warren
TITLE Integrated Bilingual Demonstration Project for High Schools; 1974-1975.
INSTITUTION New York City Board of Education, Brooklyn, N.Y. Office of Educational Evaluation.
PUB DATE 75
NOTE 23p.; The appendix to this document has been deleted due to poor legibility of the original document; New York City Board of Education Function No. 09-57603

EDRS PRICE MF-$0.83 HC-$1.67 Plus Postage.
DESCRIPTORS Attendance; *Bilingual Education; *Compensatory Education Programs; Grade 9; Grade 10; Guidance; Mathematics Instruction; Science Instruction; *Secondary Education; *Spanish Speaking; Teacher Education
IDENTIFIERS *Elementary Secondary Education Act Title VII; ESEA Title VII; *New York (Brooklyn)

ABSTRACT

This evaluation report is a description of an integrated bilingual-bicultural program which attempted to improve student achievement in oral and literate mastery of both Spanish and English. The program was funded under the Elementary Secondary Education Act, Title VII and was in its third year of operation in New York City. Two hundred ninth and tenth grade Spanish dominant students participated in the program. Students were selected for the program by both referral from guidance counselors and voluntary enrollment. The objectives of the program were to improve language proficiency and academic achievement in mathematics, social studies, and science bilingual curricula. Other program objectives were improvement in school attendance, decline of the number of dropouts, and a decrease of student referrals to the guidance office for disciplinary problems. Teacher-made tests in mathematics, social studies, and science were administered at the end of the school year. Speaking and comprehension in English, and reading in Spanish were assessed by standardized tests in Spanish. All students in the project demonstrated improvement in these areas. The students also had fewer disciplinary problems and guidance referrals than the school as a whole. Additionally, significant improvement in speaking and English comprehension was achieved by the students. (JP)

****
* Documents acquired by ERIC include many informal unpublished *
* materials not available from other sources. ERIC makes every effort *
* to obtain the best copy available. Nevertheless, items of marginal *
* reproducibility are often encountered and this affects the quality *
* of the microfiche and hardcopy reproductions ERIC makes available *
* via the ERIC Document Reproduction Service (EDRS). EDRS is not *
* responsible for the quality of the original document. Reproductions *
* supplied by EDRS are the best that can be made from the original. *
****

ED142595

EVALUATION REPORT

Function No. 09-57603

Integrated Bilingual Demonstration Project for High Schools 1974-1975

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

Warren Balinsky, Ph.D.

An Evaluation of a New York City school district educational project funded under Title VII of the Elementary and Secondary Education Act of 1965 (PL 89-10) performed for the Board of Education of the City of New York for the 1974-1975 school year.

VDO 17025

Dr. Anthony J. Polemeni, Director

BOARD OF EDUCATION OF THE CITY OF NEW YORK
OFFICE OF EDUCATIONAL EVALUATION
110 LIVINGSTON STREET, BROOKLYN, N. Y. 11201

Table of Contents

I.	The Program	1
II.	Evaluative Procedures	3
III.	Findings	9
IV.	Summary of Major Findings, Conclusions, and Recommendations	18
V.	Appendix	

List of Tables

1.	Teacher-Made Test in Mathematics	10
2.	Teacher-Made Test in Social Studies	10
3.	Teacher-Made Test in Science	10
4.	Project and School Attendance by Month	11
5.	Project and Schools Referrals	12
	Program and School Drop-out Rate	13
7.	Puerto Rican Scale of English Language Ability	14
8.	Interamerican Test of Reading-Prueba De Lectura	14

I. The Program

Eastern District High School serves the Williamsburg-Greenpoint section of Brooklyn, in District #14, and is the focus of this Project. It has the highest concentration of Hispanic students in New York City's 93 public high schools. The current estimate is that 71% of the students are of Hispanic background and that 32.1% are language handicapped. More than 2,000 students in this high school are of Hispanic background; for a high percentage of these students Spanish is the dominant language. Eastern District High School's total enrollment is 3,260 students.

The Integrated Bilingual Demonstration Project is in its third year of operation, beginning in September and ending in June. During the 1974-1975 school year, 200 students in the ninth and tenth grades have been in the program. Students were selected into the program by both referral from guidance counselors and voluntary enrollment. Instruction, supervision and guidance, the principle thrust of the program have been provided by a director, six bilingual teachers, six educational assistants, two family assistants, a bilingual guidance counselor and a secretary.

The project is housed in a mini school facility separated from but adjacent to the Eastern District High School main building. Project students receive instruction in all major curriculum areas required for high school matriculation: language arts, social studies, science, mathematics, aesthetics, physical education and crafts. English as a second language and bilingual instruction in Spanish for social studies, science, and mathematics are vital components for the students. Cross-culturalizations is programmed through a component in Hispanic music, art and dance. Project

students occasionally put on assembly and community programs to celebrate for themselves and others in the District events important to their Hispanic heritage. They also take field trips to various parts of New York City to strengthen their understanding of their environment. The project strives for its students to achieve oral and literate mastery of both Spanish and English, a positive self-image, and mutual respect and understanding as must exist in a culturally pluralistic society.

In addition to the instructional components, staff development, parental and community involvement, and materials acquisition and developments components have been planned for in the project design. The project plans to develop a practical course of study based on college-level training that will combine theory, practice, and professional in-service field experience in bilingual education that may be used as a model for reciprocal New York State teacher certification requirements nationwide.

In summary, the project strives to develop an integrated bilingual-bicultural program that may serve as a model and demonstration center for the secondary schools in other parts of the city, the state, and the country.

II. Evaluative Procedures

The evaluation design prepared by the Office of Educational Evaluation specified that the following six objectives were to be assessed:

Objective 1. - At the end of the first school year, a more significant number of the project group will pass tests in mathematics, social studies, and science than those not engaged in the project.

1A. Subjects - All 200 children in the project.

1B. Methods and Procedures - Teacher-made tests in mathematics, social studies, and science will be administered at the end of the school year, the passing mark on these tests will be 65%. After the number of students in each group receiving a passing mark in mathematics, social studies, and science is determined, percentages within each group and within each subject of pupils passing will be computed. The differences in these percentages for the two groups will be compared and the difference will be noted.

1C. Statistical and/or Qualitative Analysis - The differences in percentage of passing marks for the two groups will be noted and presented in tabular form.

1D. Time Schedule - The final tests in math, social studies, and science will be constructed by the teachers and project coordinator at the end of May, 1975. The tests will be administered during the first week of June, 1975. Analysis of the test marks will take place during the second and third weeks of June, 1975.

Objective 2. At the end of the school year, it will be demonstrated that the average attendance of the project will exceed the average attendance of the school.

2A. Subjects - All 200 children in the project group.

2B. Methods of Procedures - The attendance records of the students will be examined in the school. The mean percentage attendance rates for the project group and the school will be compared.

2C. Statistical and/or Qualitative Analysis - The average percentage rates of attendance for the project group and the average attendance of the school will be compared.

2D. Time Schedule - The records of the school will be examined for rates of attendance during the second week of June, 1975. The attendance analysis and comparisons will be made during the second and third weeks of June, 1975.

Objective 3. There will be fewer referrals, percentagewise from the project group to guidance counselors and deans of discipline than from the school as a whole.

3A. Subjects - All the students in the project group and the school who have been referred.

3B. Statistical and/or Qualitative Analysis - The numbers of students in each class who have been referred to guidance counselors and/or deans of discipline will be noted. If there are fewer referrals percentagewise, from the project group than from the non-project group, then this objective will have been achieved.

3C. Time Schedule - The request of the teachers for referral information will be made during the week of May 7, 1975. The statistical procedures will be carried out during the week of May 14, 1975.

Objective 4. Newly-designed bilingual curriculum materials will be demonstrated by the project staff.

4A. Subjects - The coordinator and teachers of the Integrated Bilingual Project.

4B. Methods and Procedures - The bilingual teachers, together with the coordinator and curriculum specialist, will develop new curriculum materials geared to the bilingual student. A portfolio of these teacher-made materials will be presented to show the new bilingual materials constructed to meet the needs of the children in the program in the fields of mathematics, social studies, and science.

4C. Statistical and/or Qualitative Analysis - No such analysis will be needed for this objective. A demonstration of these new materials will be sufficient to prove the attainment of this objective, and recorded by the evaluator.

4D. Time Schedule - The presentation of the specially-constructed curriculum material will take place toward the end of June, 1975.

Objective 5. The drop-out rate for the project group will be significantly lower, percentagewise, than that of the school as a whole.

5A. Subjects - All of the 200 pupils in the project.

5B. Methods and Procedures - The school records will be examined for statistics concerning the number of drop-outs.

5C. Statistical and/or Qualitative Analysis - The percentage drop-out rate for the two groups will be compared. If the drop-cut rate is significantly lower for the project group as compared to the school as a whole, then this objective will have been attained.

5D. Time Schedule - The examination of the school records for data on student drop-outs will be made during the week of May 14, 1975. The calculation of the statistics and their interpretation will be made during the week of May 27, 1975.

Objective 6. The students in the project will have acquired, by the end of the school year, statistically significant proficiency in their own language, and they will have acquired sufficient proficiency in English to indicate statistically significant improvement in their ratings on the Puerto Rican Study Scale.

6A. Subjects - All of the 200 pupils in the project.

6B. Methods and Procedures - The Puerto Rican Study Scale and the Inter-American Spanish Reading Test will be administered on a pre/posttest basis.

6C. Statistical and/or Qualitative Analysis - On the Inter-American Spanish Reading test, a correlated t test will be run between pre and posttest raw scores. On the Puerto Rican Study, the Median Test for correlated samples

will be run to measure statistically significant improvement.

6D. Time Schedule - Both measures will be administered during the week of September 16, 1974, and again during the week of May 14, 1975. The calculation of the statistics and their interpretation will be made during the week of May 27, 1975.

All but one of the above evaluative procedures were administered as planned. Objective #1 required modification because it was not possible to identify a comparable control group from students within Eastern District High School and not engaged in the project (See Mr. David Dicker's letter enclosed in the Appendix). Also, the 1973-1974 project evaluation discussed the extreme difficulties the evaluator had with the control group:

> "There is a serious question, however, as to the comparability of groups...Clearly the groups were not comparable."(1)

Mr. Rexford, last year's program evaluator, determined that in lieu of a comparable control group he would analyze pre/posttest improvement for statistically significant growth using a correlated t test. This evaluation (1974-1975) shall continue, the prudent modification of last year's evaluation.

Both testing periods, pre-testing administered shortly after the beginning of the project, and post-testing administered shortly before the termination of the program were implemented on time. The total number of students in the program was 200. However, when

---

(1) Moon, Jr., Rexford G., Integrated Bilingual Demonstration Project for High Schools, Office of Educational Evaluation, Board of Education of the City of New York, 1974.

one considers late entrants into the program, absentees and students who transfer to other schools during the year, it becomes clear why 57-88% of the total population is the number of pupils with both pre andpost-test scores for analysis.

III. Findings

This section shall present each objective of the evaluation followed by a table and explanation of the findings relative to that evaluative objective.

Objective 1. - Teacher-Made Tests (Mathematics, Social Studies and Science)

All students in the project received instruction in mathematics, social studies, and science. Did these students demonstrate a statistically significant improvement in these subjects as measured by teacher-made tests and analyzed on a pre/post-test basis by a correlated *t* test? Tables 1, 2 and 3 report that these students did demonstrate a statistically significant growth at the .05 significance level.

The Teacher-Made Test of Mathematics was either a pre-algebra, algebra or geometry examination as appropriate for the nine different math classes in the fall semester and eight different math classes in the spring semester.

The Teacher-Made Test of Social Studies was either a Latin studies, American history, economics, Western Civilization, or Puerto Rican history examination as appropriate for the ten different social studies classes in each semester.

The Teacher-Made Test of Science was either a general science or biology examination as appropriate for the ten different science classes in each semester.

The evaluator examined the available data for these three exams and calculated the mean raw score growth between pre and post-test to be at minimum 20 points in each case. A correlated *t* test of the difference in pre and posttest performance indicated that the

'Table 1: Teacher Made-Test in Mathematics.

	Pre-Test	Post-Test
No. of Pupils (Group)	17	17
Mean (Raw Score)	43.21	63.40
Standard Deviation	9.96	9.61
t Value	6.06	
Results	Significant Growth at .05 Level.	

'Table 2: Teacher Made-Test in Social Studies.

	Pre-Test	Post-Test
No. of Pupils (Group)	20	20
Mean (Raw Score)	46.83	74.67
Standard Deviation	9.58	4.64
t Value	11.40	
Results	Signficant Growth at .05 Level.	

'Table 3: Teacher Made-Test in Science.

	Pre-Test	Post-Test
No. of Pupils (Group)	20	20
Mean (Raw Score)	30.76	69.21
Standard Deviation	3.99	8.52
t value	17.80	
Results	Significant Growth at .05 Level.	

difference in performance was statistically significant at the .05 level in each case. Therefore, the program did achieve significant growth in mathematics, social studies and science.

Objective 2. - Attendance

This objective seeks to determine if the average attendance of the project students was greater than the average attendance of the school. Table 4 reports that the average program attendance was greater than that of the school.

Table 4: Project and School Attendance by Month.

Month	Project Attendance (%)	School Attendance (%)
September	82	59
October	85	58
November	85	59
December	86	64
January	84	46
February	87	65
March	90	67
April	91	69
Average	86	61

The mean percentage attendance of the project group was 86%, for the school it was 61%. A correlated t test of the difference in attendance percentages was significant at the .05 level (t score of 9.34). The evidence demonstrates that the project was highly successful in achieving consistently high monthly attendance as well as the objective of a significantly higher average percentage than the control group.

Objective 3. - Guidance and Discipline

This objective seeks to determine if there were fewer referrals from the project group to guidance counselors and deans of discipline than from the school as a whole. Table 5 reports that the above objective was accomplished.

Table 5: Project and School Referrals

Week	Program Referrals (%)	School Referrals (%)
2/3-2/7	1	Not Available
2/10-2/14	0	Not Available
4/28-5/2	7	20
5/5-5/9	1	13
5/12-5/16	1	15
Average	2	16

Five random weekly periods were analyzed for percentages of students who were referred to guidance counselors and deans of discipline. There were fewer referrals percentagewise, from the project group (2%) than from the non-project group (16%).

Objective 4. - Bilingual Curriculum Materials

Bilingual teachers, together with the coordinator and curriculum specialist were to have developed new bilingual curriculum materials in the fields of mathematics, social studies and science. A large quantity of high quality newly developed bilingual materials was demonstrated to the evaluator and therefore this objective was successfully attained.

The newly developed bilingual science materials for biology are recorded herein as evidence of program achievement of this objective:

Science - Biology

1. Curriculum outline
2. Program Study - 1st semester
   Program Study - 2nd semester
3. Lessons
   - I. Vital Functions (digestion, nutrition, absorbtion, respiration)
   - II. Cell Theory
   - III. Physiology of cells
   - IV. Cell parts - citoplasm
   - V. Cell Nucleus
   - VI. Amoeba and paramecium
   - VII. Organs

4. Detailed lessons for above (I to VII).
5. Multiple choice question test on respiration.
6. Outline and diagram on excretion.
7. Outline on protozoa.
8. Fill in test on respiration.
9. Chart on elements and symbols (ex. C = Carbon).
10. Outline on carbohydrates.
11. Outline on carbon, nitrogen, hydrogen and oxygen.
12. Outline on fertilization.
13. Review - fill in type.
14. Final exam (fill in, multiple choice).
15. Many, many diagrams on all of the above (muscles, heart, cells, etc.).
16. Many, many rexograph materials on above topics.

Objective 5. - Drop-out Rate

The drop-out rate for the project group and the school as a whole will be compared percentagewise. Table 6 shows that the program did do better than the school regarding drop-out rates.

Table 6: Program and School Drop-out Rate.

Month	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	Average
Program (%)	0	2	4	4	0	1	1	1	1.6
School (%)	3	3	4	4	2	2	3	2	2.9

The average percentage drop-out rate for the project group was 1.6%, whereas for the entire school it was 2.9%. A correlated *t* test of the difference in drop-out rates was significant at the .05 level (*t* score of 1.98).

Objective 6. - Speaking and Comprehension in English, Reading in Spanish.

All program students received instruction in speaking and comprehension in English and reading in Spanish. Did these students demonstrate statistically significant improvement in these three areas as measured by the Puerto Rican Scale and the Interamerican Spanish Reading Test? Tables 7 and 8 report that these students did demonstrate significant growth on all three measures of this objective. (Lower scores on comprehension

are for greater ability.)

Table 7: Puerto Rican Scale of English Language Ability.

Speaking			Comprehension		
Score	Pre-Rating Number	Post-Rating Number	Score	Pre-Rating Number	Post-Rating Number
A	0	0	1	0	4
B	23	32	2	23	54
C	26	40	3	46	56
D	34	36	4	45	27
E	59	34	5	27	1
F	0	0	6	1	0
G	0	0	7	0	0

A total of 142 students were rated on the Puerto Rican Scale of English Language Ability Test in September of 1974 and then again in June of 1975. The median scores on the comprehension pre and post-ratings were 3.02 and 2.11 respectively. The Median Test for correlated samples proved 80% of the post-ratings were better (lower) than the median of the pre-ratings. A $\underline{X}^2$ test proved significant growth at the .05 level ($X^2_{6,.95} = 40.62$).

Table 8: Interamerican Test of Reading-Prueba De Lectura.

	Pre-Test	Post-Test
No. of Pupils	113	113
Mean (Raw Score)	50.17	62.86
Standard Deviation	22.58	20.51
t value	5.87	
Results	Significant Growth at .05 Level.	

A total of 113 students were given the Interamerican Prueba De Lectura on a pre and post-test basis. This instrument is a standardized test in Spanish with components covering: (1) vocabulary, (2) comprehension speed and (3) comprehension level. A perfect score

on this examination would be 125 points.

The raw scores on the pre and posttest were 50.17 and 62.86 respectively. A correlated t test of the difference in pre and posttest performance indicated that the difference in performance was statistically significant at the .05 level.

Therefore, the project did achieve significant growth in speaking and comprehending in English and reading in Spanish.

All of the year's program objectives have been implemented consistent with the program proposal. The preceding pages explain that all of the objectives were successfully achieved with statistically significant growth whenever applicable.

Parental and community involvement was also significant. There were at least eight Parent Advisory Committee meetings and Parent Workshop meetings during the year. These meetings afforded participant's parents the opportunity to learn about the program and discuss its future improvement. The program also published an informative newsletter distributed to all concerned with the program.

Many visitors came to see this project because of its somewhat unique physical arrangement in the mini-school. No doubt they were greatly impressed, as this evaluator was, by the exceptionally well disciplined and well-groomed student body housed there. The physical arrangement is responsible for only a small portion of this accomplishment, for program staff earn a high level of respect from their students. This is truly admirable!

Bilingual teachers attended college courses at the City University of New York, aides attended programs of continuing education also.

Four paraprofessionals have already obtained their teaching licenses and are teaching in other programs in New York City. Two paraprofessionals are finishing their programs now.

Numerous field trips have been carried out during the year:

1. Camping trip - Woodland Valley Campsites
2. Radio City Music Hall
3. Flushing Meadow Park
4. Museum of Natural History
5. Brooklyn Botantical Gardens
6. Circus
7. Metropolitan Museum of Art
8. Philadelphia

Of particular achievement is the program's American Bicentennial History project.

> "In order to make the pupil more conscious of American history other than the usual manner of presentation in a classroom and the fact that the American Bicentennial is being celebrated, the pupil should in some form express his or her attitude toward the subject matter in relationship to the bicentennial. Due to the pupil's non-English background and the time allotted to complete the project, the teacher decided to use a visual approach with the written explanations and summaries representing the theme of the project."(2)

Individual student projects included: (1) The Presidency of the U. S., (2) The Congress, (3) The American Indian and (4) Historical Places. This project was an outstanding success.

The facilities and materials in the mini-school are excellent. Furthermore, the project has made the bulletin boards an integral part of the learning and educational process of the students. Because of their visual and informational benefits for the pupils, the faculty of the project with the cooperation of the pupils have decorated all the bulletin boards with various subject themes. A particularly excellent utilization of the four bulletin boards

---

(2) Olivencia, N. and Ana Aponte, Integrated Bilingual Demonstration Project for High Schools - American History Project.

in the hallways of the mini-school is a display conveying hispanic culture titled Pan American Culture.

The project staff is benefiting from its relationship with other New York City High School Bilingual Programs, at John Jay, Newton and Bushwick High Schools. The project is being used to some extent as a model for the Aspira Consent Degree Program which is funded by tax levy funds and has been instituted in the main building of the school. Eastern District High School was selected as a pilot program for this undertaking because of its successful bilingual project. In total the program is servicing the needs of the specific target population for which it was designed.

Recommendations from the last prior study are also being implemented. That is, informal follow-up of students who leave the project and return to the mainstream of Eastern District High School is being undertaken by the project coordinator. More teachers in the main building are recognizing the need for increasing their abilities in Spanish and have signed up for courses given by the Board of Education. Last year's recommendations are impacting of this year's program operation.

IV. Summary of Major Findings, Conclusions and Recommendations

All students in the project demonstrated statistically significant growth (at the .05 significance level as determined by a correlated t test) in:

1. mathematics
2. social studies
3. science
4. monthly attendance (compared to the school as a whole)
5. reading in Spanish

They also had fewer guidance and discipline problems when compared to the school as a whole. The project group also had fewer drop-outs than the school as a whole, on a percentage basis. They also showed significant growth in speaking and comprehension in English when analyzed by a Median Test. The program staff developed a tremendous volume of quality bilingual curriculum materials. The program was fully implemented as planned for in the program proposal.

From these evaluations one must conclude that the program was highly successful in achieving all of its objectives. However, in relation to the long range program goals the evaluator recommends increased effort in integrating the project into the mainstream of Eastern District High School. There are a number of things that should be done, for example: (1) the staff of the project should give a short training program for teachers not in the program on how to work with Spanish-dominant students, (2) the staff of the project should work more closely on curriculum development with the appropriate department chairperson (mathematics, social studies, etc.), and (3) the staff should work on a more regular and formal basis on

academic follow-up of students who leave the project to enter the mainstream of Eastern District High School. Though the facilities in the mini-school are excellent, to truly integrate the project into the main building, space is needed in the main building for project meetings and classes. Similarly, though guidance is excellent in the project, bilingual guidance counselors are needed in the main building to facilitate the transition of students from the project to the main building and for those students not in the project who are in need of bilingual counseling services.

With respect to future evaluations of this project, the evaluator recommends: (1) the addition of more objectives in the affective domain (such as, attitude, respect and citizenship), (2) the use of the correlated t test for pre and post-test analysis and the elimination of the control group whenever possible and (3) increasing the sample size by extending the testing period so as to pick up absentees.

The project should definitely be continued since the District is in great need of bilingual educational opportunities for its students.